

COMMUNICATIONS DATA SHEET 103

DECIBEL/VOLTAGE RATIO TABLE

Decibels	$\frac{V_2}{V_1}$	$\frac{V_1}{V_2}$	Decibels	$\frac{V_2}{V_1}$	$\frac{V_1}{V_2}$
(1)	(2)	(3)	(1)	(2)	(3)
0.1	1.0116	0.9885	28	25.12	0.03981
0.2	1.0233	0.9772	30	31.62	0.03162
0.3	1.0351	0.9660	32	39.81	0.02512
0.4	1.0471	0.9550	34	50.12	0.01995
0.5	1.0593	0.9441	36	63.10	0.01585
0.6	1.0715	0.9332	38	79.43	0.01259
0.7	1.0839	0.9226	40	100.00	0.01000
0.8	1.0965	0.9120	42	125.9	0.00794
0.9	1.1092	0.9016	44	158.5	0.00631
1.0	1.1220	0.8912	46	199.5	0.00501
1.2	1.1482	0.8710	48	251.2	0.00398
1.4	1.1749	0.8511	50	316.2	0.00316
1.6	1.2023	0.8318	52	398.1	0.00251
1.8	1.2303	0.8128	54	501.2	0.00199
2.0	1.2589	0.7943	56	631.0	0.00158
2.2	1.2882	0.7762	58	794.3	0.00126
2.4	1.3183	0.7586	60	1,000	0.00100
2.6	1.3490	0.7513	62	1,259	0.00079
2.8	1.3804	0.7244	64	1,585	0.00063
3.0	1.4125	0.7079	66	1,995	0.00050
3.5	1.496	0.6683	68	2,512	0.00040
4.0	1.585	0.6310	70	3,162	0.00032
4.5	1.679	0.5957	72	3,981	0.00025
5.0	1.778	0.5623	74	5,012	0.00020
5.5	1.884	0.5309	76	6,310	0.000158
6	1.995	0.5012	78	7,943	0.000126
7	2.239	0.4467	80	10,000	0.000100
8	2.512	0.3981	82	12,590	0.000079
9	2.818	0.3548	84	15,850	0.000063
10	3.162	0.3162	86	19,950	0.000050
12	3.981	0.2512	88	25,120	0.000040
14	5.012	0.1995	90	31,620	0.000032
16	6.310	0.1585	92	39,810	0.000025
18	7.943	0.1259	94	50,120	0.000020
20	10.00	0.1000	96	63,100	0.000016
22	12.59	0.07943	98	79,430	0.000013
24	15.85	0.06310	100	100,000	0.000010
26	19.95	0.05012			

Note

- (1) The power ratio  $\frac{P_2}{P_1}$  corresponding to any given number of decibels is the square of the voltage ratio  $V_1$ . It is thus the same as the voltage ratio corresponding to double the number of decibels. Conversely, the number of decibels corresponding to a given power ratio is half that corresponding to an equal voltage ratio.
- (2) Multiply column 3 by 100 to convert a decibel separation to a percentage.
- (3) Multiply column 1 by 0.115 to convert to nepers.